Day : Monday
Date: 2/19/2007

Time: 15:47:34

PALM INTRANET

Inventor Information for 10/781318

Inventor Name	City	State/Country
CONKLIN, DANIEL J.	LOUISVILLE	KENTUCKY

AppIn Info | Contents | Petition Info | Atty/Agent Info | Continuity/Reexam | Foreign D

Search Another: Application# [ ] Search **or Patent#** [ ] Search

PCT / [ ] / [ ] Search **or PG PUBS #** [ ] Search

Attorney Docket # [ ] Search

Bar Code # [ ] Search

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Back to PALM | ASSIGNMENT | OASIS | Home page

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	63270	(methylamine or benzylamine or monobenzylamine or aminotoluene or phenylmethanamine or aminomethane or carbinamine or monomethylamine)	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 14:52
S2	2667	S1 and ((vasodilation or vasorelaxation or vaso?) or (blood adj vessel))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:22
S3	2666	S1 and ((vasodilation or vasorelaxation) or (blood adj vessel))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 14:53
S4	28	S1 and (ssao or (semicarbazide adj sensitive))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:20
S5	1009	S3 and (hypertension or (high adj blood))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 14:57
S6	533	S3 and (hypertension or (high adj blood))	USPAT	OR	OFF	2007/02/19 14:57
S7	56	(ssao or (semicarbazide adj sensitive))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:00
S8	65397	((vasodilation or vasorelaxation or vaso?) or (blood adj vessel))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:20
S9	4	S8 and (ssao or (semicarbazide adj sensitive))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:20
S10	2666	S1 and ((vasodilation or vasorelaxation) or (blood adj vessel))	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:22
S11	1828	S10 and (blood adj vessel)	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:23
S12	1	S11 and (vasodilat? or vasorelaxat?)	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:23
S13	396	S11 and implant	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:30
S14	13279	method same (blood adj vessel)	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:31
S15	265	S14 and S1	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:35

EAST Search History

S16	2	S15 and ris	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:32
S17	1300	S14 and (tris adj aminomethane or tris)	US-PGPUB; USPAT	OR	OFF	2007/02/19 15:32
S18	8771	tris and preserv?	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:35
S19	737	S18 and (blood adj vessel)	US-PGPUB; USPAT; DERWENT	OR	OFF	2007/02/19 15:35
S20	737	S18 and (blood adj vessel)	US-PGPUB; USPAT	OR	OFF	2007/02/19 15:36
S21	195	S18 and (blood adj vessel)	USPAT	OR	OFF	2007/02/19 15:41
S22	4	S21 and millimolar	USPAT	OR	OFF	2007/02/19 15:38
S23	83772	implantation	USPAT	OR	OFF	2007/02/19 15:41
S24	62	S21 and S23	USPAT	OR	OFF	2007/02/19 15:43
S25	1218	S1 and S23	USPAT	OR	OFF	2007/02/19 15:43
S26	942	S25 and (blood adj vessel or artery or tissue)	USPAT	OR	OFF	2007/02/19 15:44

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     (FILE 'HOME' ENTERED AT 13:47:44 ON 19 FEB 2007)

     FILE 'REGISTRY' ENTERED AT 13:50:54 ON 19 FEB 2007
L1             STRUCTURE UPLOADED
L2        130403 S SSS L1 FULL

     FILE 'CAPLUS' ENTERED AT 13:56:13 ON 19 FEB 2007
               E DILATION+ALL/CT
               E VASODILATION+ALL/CT
L3           14 S L2 AND (DILATION OR EXAPANSION OR VASODILATION OR BLOOD VESSE
L4           14 FOCUS L3 1-
L5          178 S L2 AND METHYLAMINE

     FILE 'CAPLUS' ENTERED AT 14:03:08 ON 19 FEB 2007
L6            0 S L5 AND (VASODILATION OR VASORELAXATION OR VASODILATE)
L7              STRUCTURE UPLOADED
               S L7

     FILE 'REGISTRY' ENTERED AT 14:08:34 ON 19 FEB 2007
L8         31447 S L7 SSS FULL

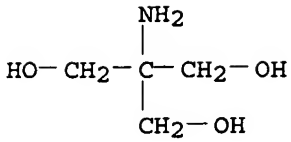
     FILE 'CAPLUS' ENTERED AT 14:09:07 ON 19 FEB 2007
L9          4597 S L8 SSS FULL

     FILE 'CAPLUS' ENTERED AT 14:09:38 ON 19 FEB 2007

     FILE 'CAPLUS, USPATFULL' ENTERED AT 14:09:46 ON 19 FEB 2007
L10         5176 S L8
L11           37 S L10 AND (DILATION OR EXAPANSION OR VASODILATION OR BLOOD VESS
L12            2 S L10 AND (SEMICARBAZIDE SENSITIVE AMINE OXIDASE OR SSAO OR SSA
L13            2 DUP REM L12 (0 DUPLICATES REMOVED)
L14           36 DUP REM L11 (1 DUPLICATE REMOVED)
L15           38 S L13 OR L14
L16           38 DUP REM L15 (0 DUPLICATES REMOVED)
L17           38 FOCUS L16 1-
L18            0 S CONKLIN/INV
L19            0 S CONKLIN/INV.
L20            0 S CONKLIN AND L17
L21          788 S CONKLIN
L22            4 S L21 AND (SEMICARBAZIDE SENSITIVE AMINE OXIDASE OR SSAO OR SSA
L23            4 DUP REM L22 (0 DUPLICATES REMOVED)
L24          330 S L10 AND (BLOOD VESSEL OR ARTERY)
L25          216 S L10 AND (BLOOD VESSEL)
L26           59 S L25 AND (HYPERTENSION OR HIGH BLOOD PRESSURE OR VASOSPASM OR
L27           59 FOCUS L26 1-
L28           10 S L25 AND (PD <=2004)
L29           10 FOCUS L28 1-
L30           82 S (BLOOD VESSEL) AND (SEMICARBAZIDE SENSITIVE AMINE OXIDASE OR
L31           82 S L30 AND ?AMINE
L32           36 S L31 AND (SUBSTRATE)
L33           26 S L32 AND PD <+2004
L34           29 S L32 AND PD <=2004

=>
```

L3 ANSWER 52 OF 52 REGISTRY COPYRIGHT 2007 ACS on STN
RN 77-86-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN 1,3-Propanediol, 2-amino-2-(hydroxymethyl)- (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2-Amino-1,3-dihydroxy-2-(hydroxymethyl)propane
CN 2-Amino-2-(hydroxymethyl)propane-1,3-diol
CN 2-Amino-2-hydroxymethylpropan-1,3-diol
CN 2-Amino-2-methylol-1,3-propanediol
CN Addex-Tham
CN Aminotri(hydroxymethyl)methane
CN Aminotrimethylolmethane
CN Aminotris(hydroxymethyl)methane
CN Methanamine, 1,1,1-tris(hydroxymethyl)-
CN NSC 103026
CN NSC 6365
CN NSC 65434
CN Pehanorm
CN Sarkosyl
CN Talatrol
CN TAM
CN TAM (buffering agent)
CN THAM
CN Tri Amino
CN Tri(hydroxymethyl)methylamine
CN Trigmo base
CN Triladyl
CN Trimethylolaminomethane
CN Tris
CN Tris (buffering agent)
CN Tris Amino
CN Tris Amino Crystal
CN Tris base
CN Tris buffer
CN Tris(hydroxymethyl)aminomethane
CN Tris(hydroxymethyl)methanamine
CN Tris(hydroxymethyl)methylamine
CN Tris(methylolamino)methane
CN Tris-steril
CN Trisamin
CN Trisamine
CN Trisaminol
CN Trispuffer
CN Trizma
CN Trometamol
CN Trometamole
CN Tromethamine
CN Tromethane
CN Tromethanmin
CN Tutofusin tris
CN [2-Hydroxy-1,1-bis(hydroxymethyl)ethyl]amine
DR 857365-23-2, 25149-07-9, 119320-15-9, 68755-45-3, 83147-39-1, 108195-86-4
MF C4 H11 N O3
CI COM
LC STN Files: ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, PATDPASPC, PIRA, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, USAN, USPAT2, USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

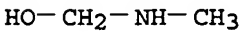


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6037 REFERENCES IN FILE CA (1907 TO DATE)
371 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
6088 REFERENCES IN FILE CAPLUS (1907 TO DATE)
71 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

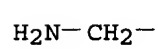
L1 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2007 ACS on STN
RN 3400-38-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN Methanol, (methylamino)- (7CI, 8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN (Methylamino)methanol
CN Hydroxymethylaminomethane
MF C2 H7 N O
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CIN, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

38 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
38 REFERENCES IN FILE CAPLUS (1907 TO DATE)
3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2007 ACS on STN
RN 100-46-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzenemethanamine (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Benzylamine (8CI)
OTHER NAMES:
CN (Aminomethyl)benzene
CN (Phenylmethyl)amine
CN α-Aminotoluene
CN ω-Aminotoluene
CN 1-Phenylmethanamine
CN Monobenzylamine
CN N-Benzylamine
CN NSC 8046
CN Phenylmethanamine
DR 857483-23-9, 858831-93-3
MF C7 H9 N
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

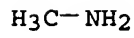


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

19455 REFERENCES IN FILE CA (1907 TO DATE)
623 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
19507 REFERENCES IN FILE CAPLUS (1907 TO DATE)
6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2007 ACS on STN
RN 74-89-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Methanamine (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Methylamine (8CI)
OTHER NAMES:
CN Aminomethane
CN Carbinamine
CN MMA
CN Monomethylamine
DR 119775-09-6, 85404-17-7, 42939-70-8
MF C H5 N
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

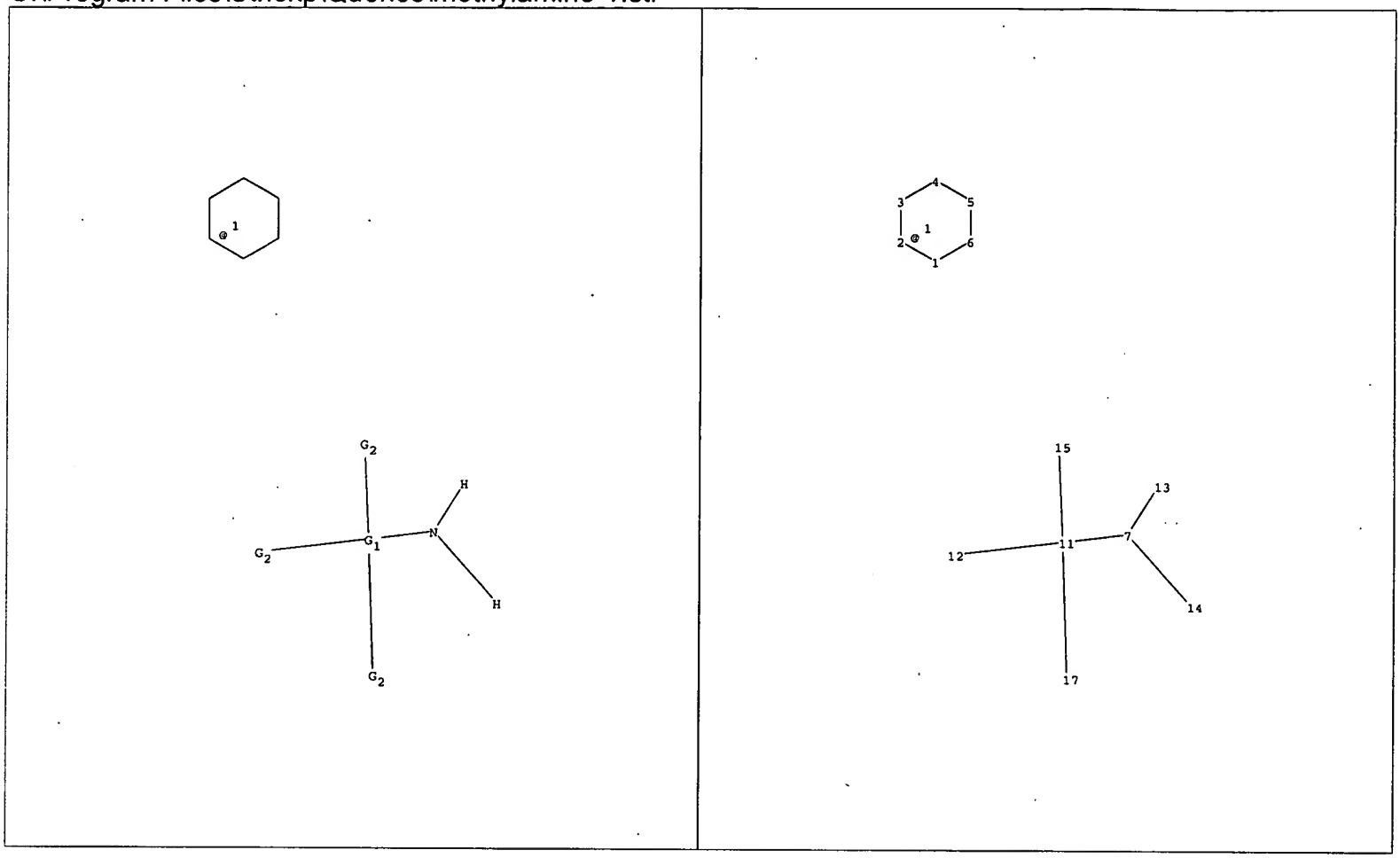


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

18709 REFERENCES IN FILE CA (1907 TO DATE)
1059 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
18741 REFERENCES IN FILE CAPLUS (1907 TO DATE)
13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

C:\Program Files\Stnexp\Queries\methylamine-1.str



chain nodes :
7 11 12 13 14 15 17
ring nodes :
1 2 3 4 5 6
chain bonds :
7-11 7-13 7-14 11-12 11-15 11-17
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6
exact/norm bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-11 11-12 11-15 11-17
exact bonds :
7-13 7-14

G1:Ak,Cb,Hy,[*1]

G2:H,OH,COOH,NH2

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS
17:CLASS

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* * * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 13:47:44 ON 19 FEB 2007

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	1.05	1.05

FILE 'REGISTRY' ENTERED AT 13:50:54 ON 19 FEB 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 18 FEB 2007 HIGHEST RN 921759-52-6
DICTIONARY FILE UPDATES: 18 FEB 2007 HIGHEST RN 921759-52-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=>
Uploading C:\Program Files\Stnexp\Queries\methylamine.str

L1 STRUCTURE UPLOADED

=> s sss l1 full
FULL SEARCH INITIATED 13:51:11 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 22758525 TO ITERATE

1.1% PROCESSED	260919 ITERATIONS	31990 ANSWERS
2.0% PROCESSED	457784 ITERATIONS	55295 ANSWERS
3.6% PROCESSED	819629 ITERATIONS	110305 ANSWERS
4.0% PROCESSED	907287 ITERATIONS	121940 ANSWERS
4.2% PROCESSED	949598 ITERATIONS	124905 ANSWERS
4.4% PROCESSED	1000000 ITERATIONS	130403 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.01.32

FULL FILE PROJECTIONS: ONLINE **INCOMPLETE**

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                        BATCH   **INCOMPLETE**
PROJECTED ITERATIONS:     22758525 TO 22758525
PROJECTED ANSWERS:         2962697 TO  2972861

L2       130403 SEA SSS FUL L1

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   175.70     176.75

FILE 'CAPLUS' ENTERED AT 13:56:13 ON 19 FEB 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE COVERS 1907 - 19 Feb 2007  VOL 146 ISS 9
FILE LAST UPDATED: 18 Feb 2007  (20070218/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/infopolicy.html

=> s l2 and (dilation or exapansion or vasodilation or blood vessel dilation or
vascular dilation or vascular relaxation or vasorelaxation)
         12360 L2
         19502 DILATION
           632 DILATIONS
         19806 DILATION
                 (DILATION OR DILATIONS)
             5 EXAPANSION
         20428 VASODILATION
           179 VASODILATIONS
         20471 VASODILATION
                 (VASODILATION OR VASODILATIONS)
       1289271 BLOOD
          1248 BLOODS
       1289412 BLOOD
                 (BLOOD OR BLOODS)
        230988 VESSEL
         90275 VESSELS
        283577 VESSEL
                 (VESSEL OR VESSELS)
         19502 DILATION
           632 DILATIONS
         19806 DILATION
                 (DILATION OR DILATIONS)
          2366 BLOOD VESSEL DILATION
                 (BLOOD(W)VESSEL(W)DILATION)
        166492 VASCULAR
             6 VASCULARS
        166496 VASCULAR
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            (VASCULAR OR VASCULARS)
        19502 DILATION
          632 DILATIONS
        19806 DILATION
            (DILATION OR DILATIONS)
          170 VASCULAR DILATION
            (VASCULAR(W)DILATION)
       166492 VASCULAR
            6 VASCULARS
       166496 VASCULAR
            (VASCULAR OR VASCULARS)
       251649 RELAXATION
        12732 RELAXATIONS
       254997 RELAXATION
            (RELAXATION OR RELAXATIONS)
          926 VASCULAR RELAXATION
            (VASCULAR(W)RELAXATION)
         2597 VASORELAXATION
           85 VASORELAXATIONS
         2625 VASORELAXATION
            (VASORELAXATION OR VASORELAXATIONS)
L3         14 L2 AND (DILATION OR EXAPANSION OR VASODILATION OR BLOOD VESSEL
              DILATION OR VASCULAR DILATION OR VASCULAR RELAXATION OR VASORELA
             XATION)

=> focus
PROCESSING COMPLETED FOR L3
L4          14 FOCUS L3 1-

=> d ibib abs 1-14 hitstr

L4   ANSWER 1 OF 14  CAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:        2006:1173484  CAPLUS
DOCUMENT NUMBER:         145:489283
TITLE:                   N-Acylpiperidines and related compounds as
                         CGRP-antagonists, methods for preparing them,
                         pharmaceutical compositions and their use as
                         pharmaceutical compositions
INVENTOR(S):             Mueller, Stephan Georg; Rudolf, Klaus; Lustenberger,
                         Philipp; Stenkamp, Dirk; Santagostino, Marco; Paleari,
                         Fabio; Schaenzle, Gerhard; Arndt, Kirsten; Doods,
                         Henri
PATENT ASSIGNEE(S):      Boehringer Ingelheim International GmbH, Germany
SOURCE:                  U.S. Pat. Appl. Publ., 156pp.
                         CODEN: USXXCO
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  5
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
     US 2006252931         A1    20061109    US 2006-277177          20060322
     WO 2005092880         A1    20051006    WO 2005-EP3094          20050323
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
             SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
             AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
             EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
             RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
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L34 ANSWER 1 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:672498 CAPLUS
DOCUMENT NUMBER: 141:259314
TITLE: A peptide inhibitor of vascular adhesion protein-1 (VAP-1) blocks leukocyte-endothelium interactions under shear stress
AUTHOR(S): Yegutkin, Gennady G.; Salminen, Tiina; Koskinen, Kaisa; Kurtis, Christian; McPherson, Michael J.; Jalkanen, Sirpa; Salmi, Marko
CORPORATE SOURCE: MediCity Research Laboratory, Turku University and National Public Health Institute, Turku, Finland
SOURCE: European Journal of Immunology (2004), 34(8), 2276-2285
CODEN: EJIMAF; ISSN: 0014-2980
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Vascular adhesion protein-1 (VAP-1) is an endothelial adhesion mol. mediating leukocyte interactions with blood vessels during leukocyte extravasation. Molecularly VAP-1 is a cell-surface-expressed ecto-enzyme belonging to the group of semicarbazide-sensitive amine oxidases (SSAO; EC 2.4.6.3), which deaminate primary amines. Here the authors asked whether peptides displaying a suitable free amine group could be a substrate or inhibitor of SSAO and thus regulate VAP-1-mediated leukocyte adhesion. On the basis of a mol. model of VAP-1, the authors designed synthetic peptides that fit to the substrate channel of VAP-1. One of these lysine-containing peptides effectively inhibits VAP-1-dependent lymphocyte rolling and firm adhesion to primary endothelial cells under physiol. relevant shear conditions. The same peptide inhibits the SSAO activity of endothelial and recombinant VAP-1 in a selective and long-lasting manner. The authors also show that all enzymically active VAP-1 is displayed on the cell surface. The authors' results suggest that, in addition to soluble amines, specific cell-surface-bound mols. containing free NH2 groups in a suitable position may modulate the enzymic activity of SSAO. Moreover, the inhibitory peptide diminishes leukocyte interactions with endothelial cells under conditions of shear, and thus it may be useful to treat inflammatory conditions.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 2 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:383251 CAPLUS
DOCUMENT NUMBER: 140:417085
TITLE: Semicarbazide-sensitive amine oxidase: Current status and perspectives
AUTHOR(S): Matyus, P.; Dajka-Halasz, B.; Foeldi, A.; Haider, N.; Barlocco, D.; Magyar, K.
CORPORATE SOURCE: Department of Organic Chemistry, Semmelweis University, Budapest, Hung.
SOURCE: Current Medicinal Chemistry (2004), 11(10), 1285-1298
CODEN: CMCHE7; ISSN: 0929-8673
PUBLISHER: Bentham Science Publishers Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Semicarbazide-sensitive amine-oxidase (SSAO) is present in various human tissues and in plasma. Oxidative deamination of short-chain aliphatic amines is catalyzed by this enzyme to afford the corresponding aldehydes, ammonia and hydrogen peroxide. Methylamine and aminoacetone have been

recognized to be physiol. substrates for SSAO. There are several pathol. states where increased serum SSAO activity have been found, such as diabetes mellitus, congestive heart failure, multiple types of cerebral infarction, uremia, and hepatic cirrhosis. The role of SSAO in pathophysiol. of diabetes has been most extensively investigated. The elevated formation of the potentially cytotoxic products of the enzyme may contribute to the endothelial injury of blood vessels, resulting in the early development of severe atherosclerosis; it may also contribute to the pathogenesis of diabetic angiopathy. It is now suggested that SSAO inhibitors may prevent the development of atherosclerosis and diabetic complications as well. Inhibitors can be conveniently subdivided into the main groups of hydrazine derivs., arylalkylamines, propenyl- and propargylamines, oxazolidinones, and haloalkylamines. Of them, aryl(alkyl)hydrazines, and 3-halo-2-phenylallylamines are generally very strong SSAO inhibitors. Most of these inhibitors of SSAO have been originally developed for other purposes, or they are simple chemical reagents with highly reactive structural element(s); these compds. have not been able to fulfil all criteria of high potency, selectivity, and acceptable toxicity. New potent compds. with selectivity and low toxicity are needed, which may prove useful tools for understanding the roles and function of SSAO, or they may even be valuable substances for treatment of various diseases.

REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 3 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:308809 CAPLUS

DOCUMENT NUMBER: 140:389683

TITLE: Semicarbazide-sensitive amine oxidase overexpression has dual consequences: insulin mimicry and diabetes-like complications

AUTHOR(S): Stolen, Craig M.; Madanat, Rami; Marti, Luc; Kari, Seppo; Yegutkin, Gennady G.; Sariola, Hannu; Zorzano, Antonio; Jalkanen, Sirpa

CORPORATE SOURCE: MediCity Res. Lab., Univ. of Turku and Natl. Public Health Inst., Turku, 20520, Finland

SOURCE: FASEB Journal (2004), 18(6), 702-704, 10.1096/fj.03-0562fje
CODEN: FAJOEC; ISSN: 0892-6638

PUBLISHER: Federation of American Societies for Experimental Biology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Semicarbazide-sensitive amine oxidases (SSAO) are copper-containing enzymes that oxidatively deaminate primary amines to produce hydrogen peroxide, ammonium, and specific aldehydes. Vascular adhesion protein-1 (VAP-1) is a cell surface and soluble mol. that possesses SSAO activity. VAP-1 protein, SSAO activity, and SSAO reaction products are elevated in the serum of patients with diabetes, congestive heart failure, and specific inflammatory liver diseases. By expressing human VAP-1/SSAO on mouse endothelial cells and subsequently in the serum, and by chronically treating the transgenic mice for 15 mo with a high-fat diet and a physiol. substrate for SSAO, methylamine, the in vivo roles of SSAO were assessed. The VAP-1 transgene increased the mouse body mass index and s.c. abdominal fat pad wts. in a manner independent of food consumption. The transgene together with increased SSAO substrate availability enhanced glucose uptake in an SSAO-dependent manner. The increased SSAO activity also led to diabetes-like complications, including advanced glycation end product formation, elevated blood pressure, altered atherosclerosis progression, and nephropathy. These

findings suggest that, although manipulation of VAP-1/SSAO has potential to serve as a therapeutic treatment in insulin-resistant conditions, care must be taken to fully understand its impact on obesity and vascular damage.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs 4-29

L34 ANSWER 4 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:780531 CAPLUS
DOCUMENT NUMBER: 139:394456
TITLE: Serum semicarbazide-sensitive amine oxidase activity in patients with retinopathy in type 2 diabetes mellitus
AUTHOR(S): Dura, E.; Meszaros, Zs.; Salacz, Gy.; Magyar, K.; Romics, L.; Karadi, I.
CORPORATE SOURCE: 2nd Department of Ophthalmology, Semmelweis University, Budapest, Hung.
SOURCE: Diabetes Research (2001), Volume Date 2000-2001, 35(4), 127-141
CODEN: DIREEM; ISSN: 0265-5985
PUBLISHER: Teviot-Kimpton Publications
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This study aimed to examine the association between serum semicarbazide-sensitive amine oxidase (SSAO) activity and the severity of retinopathy in Type 2 diabetic patients. Recent data suggest that this amine oxidase enzyme may play a role in vascular endothelial damage through conversion of certain endogenous monoamines, like methylamine, into cytotoxic aldehydes, hydrogen peroxide and ammonia. A prospective study was performed on a defined group of Type 2 diabetic patients (n=93) compared to non-diabetic control subjects (n=42). Age at diagnosis, gender, duration of diabetes, presence of systemic hypertension and BMI were recorded. All participants underwent a detailed ophthalmic evaluation, color retinal photog. and laboratory investigations. Besides routine metabolic parameters and renal function characteristics, serum SSAO activity was determined by a radio-enzymic procedure using [14C]-benzylamine as substrate. SSAO activity (mean±SD) was significantly higher in patients with high-risk proliferative diabetic retinopathy (n=16, 166.96±70.56 pmol.mg-1 protein.hour-1) compared to those without retinopathy (n=42, 119.54±50.49 pmol.mg-1 protein.hour-1). In the total group of Type 2 diabetic patients SSAO activity was significantly elevated compared to nondiabetic controls (n=93, 131.72±53.07 vs. n=42, 89.56±26.89 pmol.mg-1 protein.hour1). Our results support the hypothesis that elevated SSAO activity may be involved in the pathogenesis of microvascular diabetic late complications, such as retinopathy.
REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 5 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:274108 CAPLUS
DOCUMENT NUMBER: 139:34047
TITLE: Physiological and pathological implications of semicarbazide-sensitive amine oxidase
AUTHOR(S): Yu, Peter H.; Wright, Shannon; Fan, Ellen H.; Lun, Zhao-Rong; Gubisne-Harberle, Diana
CORPORATE SOURCE: Medical Research Building, College of Medicine, Department of Psychiatry, Neuropsychiatry Research

Unit, University of Saskatchewan, Saskatoon, SK, A114, Can.
SOURCE: Biochimica et Biophysica Acta, Proteins and Proteomics (2003), 1647(1-2), 193-199
CODEN: BBAPBW; ISSN: 1570-9639
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Semicarbazide-sensitive amine oxidase (SSAO) catalyzes the deamination of primary amines. Such deamination has been shown capable of regulating glucose transport in adipose cells. It has been independently discovered that the primary structure of vascular adhesion protein-1 (VAP-1) is identical to SSAO. VAP-1 regulates leukocyte migration and is related to inflammation. Increased serum SSAO activities have been found in patients with diabetic mellitus, vascular disorders and Alzheimer's disease. The SSAO-catalyzed deamination of endogenous substrates, i.e., methylamine and aminoacetone, led to production of toxic formaldehyde and methylglyoxal, hydrogen peroxide and ammonia, resp. These highly reactive aldehydes have been shown to initiate protein cross-linkage, exacerbate advanced glycation of proteins and cause endothelial injury. Hydrogen peroxide contributes to oxidative stress. 14C-methylamine is converted to 14C-formaldehyde, which then forms labeled long-lasting protein adduct in rodents. Chronic methylamine treatment increased the excretion of malondialdehyde and microalbuminuria, and enhanced the formation of fatty streaks in C57BL/6 mice fed with an atherogenic diet. Treatment with selective SSAO inhibitor reduces atherogenesis in KKAy diabetic mice fed with high-cholesterol diet. Aminoguanidine, which blocks advanced glycation and reduces nephropathy in animals, is in fact more potent at inhibiting SSAO than its effect on glycation. It suggests that SSAO is involved in vascular disorders under certain pathol. conditions. Although SSAO has been known for several decades, its physiol. and pathol. implications are just beginning to be recognized.
REFERENCE COUNT: 90 THERE ARE 90 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 6 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:274083 CAPLUS
DOCUMENT NUMBER: 139:34044
TITLE: Plasma semicarbazide-sensitive amine oxidase in human (patho)physiology
AUTHOR(S): Boomsma, Frans; Bhaggoe, Usha M.; van der Houwen, Angelique M. B.; van den Meiracker, Anton H.
CORPORATE SOURCE: Department of Internal Medicine, Erasmus MC, Rotterdam, 3015 GD, Neth.
SOURCE: Biochimica et Biophysica Acta, Proteins and Proteomics (2003), 1647(1-2), 48-54
CODEN: BBAPBW; ISSN: 1570-9639
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with refs. Semicarbazide-sensitive amine oxidases (SSAO) are widely distributed enzymes, with as yet not fully elucidated functions and roles, present in many tissues but also circulating in plasma. The enzyme also functions as an adhesion mol., the vascular adhesion protein-1. In healthy humans, plasma SSAO activity is constant from birth until 16 yr of age, when it drops to lower values, gradually increasing again at advanced ages. When measuring SSAO activity, care should be taken to ensure proper preparation and storage conditions, and it should be realized that quite a few drugs unintentionally are good inhibitors, and sometimes even substrates, of SSAO. Under normal conditions

SSAO activity is constant and inter-individual variation is small. In various pathophysiol. conditions plasma SSAO activities are increased, most notably in diabetes mellitus (both type I and type II), in congestive heart failure and in cirrhotic liver inflammation. In patients with other vascular and inflammatory diseases plasma SSAO is normal, while it is low in children with congenital lung diseases. Interpretation of these changes is speculative, since source and regulation of plasma SSAO are as yet unknown. However, in two situations where the disease-causing process was ended (transplantation, delivery), plasma SSAO returned to normal. Many questions remain to be answered.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 7 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:817630 CAPLUS
DOCUMENT NUMBER: 138:268952
TITLE: Semicarbazide-sensitive amine oxidase and extracellular matrix deposition by smooth-muscle cells
AUTHOR(S): Langford, Shannon D.; Trent, Margaret B.; Boor, Paul J.
CORPORATE SOURCE: Wyle Laboratories, Cellular Biotechnology-Flight Definition, NASA Johnson Space Center, Houston, TX, 77058, USA
SOURCE: Cardiovascular Toxicology (2002), 2(2), 141-150
CODEN: CTAOAT; ISSN: 1530-7905
PUBLISHER: Humana Press Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have recently reported in vivo disruption of collagen and elastin architecture within blood vessel walls resulting from the selective inhibition of the enzyme semicarbazide-sensitive amine oxidase (SSAO). This study further investigates the effects of SSAO inhibition on extracellular matrix deposition by smooth-muscle cells (SMCs) cultured from neonatal rat hearts. SMCs were characterized, SSAO activity was measured, and soluble and insol. collagen and elastin in the extracellular matrix (ECM) were quantified. Cultured neonatal rat heart SMC exhibited a monotypic synthetic phenotype that likely represents a myofibroblast. Detectable levels of SSAO activity present throughout 30-d culture peaked at 7-14 d, coinciding with the production of ECM. The addition of enzyme inhibitors and alternate SSAO substrates (benzylamine) produced varied and, in some cases, marked changes in SSAO activity as well as in the composition of mature and soluble matrix components. Similar to our previous in vivo findings, in vitro SSAO inhibition produced aberrations in collagen and elastin deposition by heart SMC. Because changes in SSAO activity are associated with cardiovascular pathol. states, this enzyme may play a protective or modulating role by regulating ECM production during pathol. insult.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 8 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:569076 CAPLUS
DOCUMENT NUMBER: 138:35044
TITLE: Enzymic characteristics and physiological roles of mammalian tissue-bound semicarbazide-sensitive amine oxidase
AUTHOR(S): Kinemuchi, Hiroyasu; Kobayashi, Naoyuki; Takahashi, Kazuya; Takayanagi, Kaori; Takahashi, Kaori
CORPORATE SOURCE: Department of Basic Science, School of Science and

Engineering, Ishinomaki Senshu University, Ishinomaki, 986-8580, Japan
SOURCE: Ishinomaki Senshu Daigaku Kenkyu Kiyo (2001), 12, 67-83
CODEN: ISDKFS; ISSN: 0915-8715
PUBLISHER: Ishinomaki Senshu Daigaku
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. Mammalian tissues contain membrane-bound semicarbazide -sensitive amine oxidase (SSAO) which metabolizes the synthetic amine benzylamine extremely well. The sensitivity of this enzyme to inhibition by semicarbazide and related compds. indicates that it contains a reactive carbonyl group(s), as a co-factor, which recently has been identified as 6-hydroxydopa quinone (topa quinone). Many compds. have now been identified as relatively selective inhibitors to distinguish the SSAO from e.g. monoamine oxidase, in order to study the properties of SSAO and its potential role in biogenic and xenobiotic amine metabolism We recently developed a potent and specific suicide-SSAO inhibitor, 2-bromoethylamine. Using this inhibitor, it is possible to study the role of the enzyme in various mammalian tissues. The tissue SSAO is membrane-bound, probably plasmalemmal enzyme, which may metabolize extracellular amines. There is some evidence that SSAO in the plasmalemma may face outward to metabolize extracellular amines without any help of the membrane re-uptake system. Vascular and non-vascular smooth muscle cells have particularly high SSAO activity, but recently the enzyme has been found in adipocytes, chondrocytes, odontoblasts, implying a functional importance not restricted solely to smooth muscle. The substrate specificity of tissue SSAO shows considerable species-related variations. For example, some endogenously-occurring aromatic amines such as tyramine and tryptamine are oxidized well by tissue-bound SSAO from rat blood vessels. Inhibition of SSAO activity potentiates vasoconstrictor actions of these amines in rat vascular prepns., although these amines are poor substrate for human SSAO, thus complicating attempt to generalize possible physiol. roles in the mammalian tissues for this enzyme. More recently, the complete primary sequence of bovine SSAO has been deduced from a bovine liver cDNA library. This predicted a sequence of 762 amino acids with mol. weight of 84,750 Da. Recent studies showed that vascular SSAO metabolizes in vitro and in vivo aliphatic xenobiotic and endogenous amines, such as allylamine, methylamine and aminoacetone to the cytotoxic aldehydes and these have been linked to the ability of diabetic complications.

L34 ANSWER 9 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:67711 CAPLUS
DOCUMENT NUMBER: 136:260479
TITLE: Semicarbazide-sensitive amine oxidase in vascular smooth muscle cells: differentiation-dependent expression and role in glucose uptake
AUTHOR(S): El Hadri, Khadija; Moldes, Marthe; Mercier, Nathalie; Andreani, Marise; Pairault, Jacques; Feve, Bruno
CORPORATE SOURCE: Centre de Recherches Biomedical des Cordeliers, Universite Pierre et Marie Curie, Paris, 75270, Fr.
SOURCE: Arteriosclerosis, Thrombosis, and Vascular Biology (2002), 22(1), 89-94
CODEN: ATVBFA; ISSN: 1079-5642
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Cultured vascular smooth muscle cells (VSMCs) derived from rat aortic

media were used to examine semicarbazide-sensitive amine oxidase (SSAO) expression during their differentiation process. In a defined serum-free medium permissive for in vitro VSMC differentiation, there was a large increase in SSAO mRNA and protein levels and in the related enzyme activity during the course of cell culture. This pattern of expression was concomitant with that of some smooth muscle-specific mRNA markers of differentiation. MRNAs in differentiated cultured VSMCs were comparable to those detected in total aorta and media. Pharmacol. properties of SSAO present in VSMCs were similar to enzyme activities previously described in the aortic wall. In this model, we also demonstrated that methylamine, a physiol. substrate of SSAO, activated 2-deoxyglucose transport in a time- and dose-dependent manner. This methylamine effect was reproduced by other SSAO substrates and was prevented by the SSAO inhibitor semicarbazide. It was antagonized in the presence of catalase, suggesting that SSAO-activated glucose transport was mediated through H2O2 production In addition, methylamine promoted glucose transporter 1 accumulation at the cell surface. Thus, we demonstrate for the first time the differentiation-dependent expression of SSAO in VSMCs and its role in the regulation of VSMC glucose uptake.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 10 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:915600 CAPLUS
DOCUMENT NUMBER: 136:146909
TITLE: Semicarbazide-sensitive amine oxidase. Its physiological significance
AUTHOR(S): Magyar, K.; Meszdros, Z.; Matyus, P.
CORPORATE SOURCE: IUPAC Commission, Department of Pharmacodynamics, Department of Organic Chemistry, Faculty of Pharmacy, Semmelweis University, Budapest, Hung.
SOURCE: Pure and Applied Chemistry (2001), 73(9), 1393-1400
CODEN: PACHAS; ISSN: 0033-4545
PUBLISHER: International Union of Pure and Applied Chemistry
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. Although the existence of plasma- and tissue-bound semicarbazide-sensitive amine oxidases (SSAOs) has been recognized earlier, the physiol. relevance of the enzyme still remains uncertain. Recent data suggest that elevated serum SSAO activity might cause endothelial injury. Formation of cytotoxic metabolites (e.g., formaldehyde) and increased oxidative stress might lead to initiation or progression of atherosclerosis. Significant pos. correlation was found between serum SSAO activity and severity of atherosclerosis, and diabetic macrovascular complications. Effective and selective inhibitors of human SSAO might exert cytoprotective effect on endothelial cells. Compds. having similar structure to mexiletine were synthesized and studied relating to SSAO activity. The reference substrate was MDL-72974A. Unfortunately, our new compds. did not reach the potency of the reference substance using human serum samples. In conclusion, we suppose that vascular and soluble SSAO enzymes might have different inhibitor sensitivity. Further studies are required to determine whether the soluble or vascular isoform of SSAO will be the main therapeutic target in the future.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 11 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:373602 CAPLUS
DOCUMENT NUMBER: 135:150947
TITLE: Semicarbazide-sensitive amine oxidase catalyzes endothelial cell-mediated low density lipoprotein oxidation
AUTHOR(S): Exner, M.; Hermann, M.; Hofbauer, R.; Kapiotis, S.; Quehenberger, P.; Speiser, W.; Held, I.; Gmeiner, B. M. K.
CORPORATE SOURCE: Clinical Institute of Medical and Chemical Laboratory Diagnostics, University of Vienna, Vienna, Austria
SOURCE: Cardiovascular Research (2001), 50(3), 583-588
CODEN: CVREAU; ISSN: 0008-6363
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Objective: Deamination products of semicarbazide-sensitive amine oxidases (SSAO), i.e. aldehydes, superoxide and ammonia have been shown to initiate vascular damage. SSAOs are copper-enzymes, present in endothelial (EC), smooth muscle cells (SMC) and in blood. Transition metals ions (Cu, Fe) mediate the oxidative (atherogenic) modification of LDL by SMC and EC. The physiol. source of the active metal ions is still under debate. We hypothesize that SSAOs may catalyze LDL oxidation by endothelial cells via enzyme-complexed Cu++. Methods: EC isolated from human umbilical veins and cultured in 35 mm wells in RPMI-1640 medium were used as LDL oxidation system. Results: Diamine oxidase (DAO), a SSAO which activity is elevated in tissues and sera of diabetic patients, catalyzes the oxidation of LDL by EC. In the presence of purified DAO (0.07 to 70 U/L) LDL oxidation was increased up to 10-fold as measured by thiobarbituric acid reactive substance (TBARS) formation as well as apoprotein modification of LDL. Chemical blockage of the SSAO substrate binding site did not inhibit the catalytic effect of DAO on LDL oxidation Denaturation of the enzyme did not destroy the ability of the preparation to facilitate LDL oxidation by EC. The potential of the enzyme to catalyze LDL oxidation was not suppressed in the presence of serum. However, selective removing of enzyme-copper completely abolished the ability of the enzyme to trigger cell-mediated LDL oxidation Conclusion: DAO, beside generating angiopathic deamination products, has the potential to act as a pathophysiol. catalyst of LDL atherogenic modification by vascular cells.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 12 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:867382 CAPLUS
DOCUMENT NUMBER: 134:278807
TITLE: Plasma semicarbazide-sensitive amine oxidase (SSAO) is an independent prognostic marker for mortality in chronic heart failure
AUTHOR(S): Boomsma, F.; De Kam, P. J.; Tjeerdsma, G.; Van Den Meiracker, A. H.; Van Veldhuisen, D. J.
CORPORATE SOURCE: Department of Internal Medicine, Erasmus university Medical Centre Rotterdam, Rotterdam, 3015 GD, Neth.
SOURCE: European Heart Journal (2000), 21(22), 1859-1863
CODEN: EHJODF; ISSN: 0195-668X
PUBLISHER: W. B. Saunders Co. Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Aims: Exptl. evidence has suggested that semicarbazide-sensitive amine oxidase is involved in vascular endothelial damage and in the process of atherosclerosis, through

the formation of reactive aldehydes, hydrogen peroxide and ammonia from endogenous substrates. Recent evidence indicates that semicarbazide-sensitive amine oxidase may be identical with the vascular adhesion protein-1. In patients with diabetes mellitus and chronic heart failure the plasma activity is raised relative to the severity of the disease. The prognostic value of plasma semicarbazide-sensitive amine oxidase is not known. Methods and Results: Plasma semicarbazide-sensitive amine oxidase activity was measured at baseline in patients with moderate to severe chronic heart failure who participated in a large European study (PRIME-II). The 372 patients who took part in a pre-defined substudy in The Netherlands were investigated and a survival follow-up (maximum 5.4 yr, mean 3.4 yr) was carried out. Within the follow-up period 195 patients died. Plasma semicarbazide-sensitive amine oxidase was higher at baseline in those who died than in the survivors (653±258 vs. 540±242 mU.l-1, P0.001). Dividing the patients into two groups according to plasma values above or below the median value of 550 mU.l-1, semicarbazide-sensitive amine oxidase was found to be a prognostic parameter for survival, both in univariate (P<0.0001) and in multivariate (P=0.0106) anal. Semicarbazide-sensitive amine oxidase values >550 mU.l-1 had a 1.50 (95% CI, 1.10-2.04) times increased risk of death. Conclusion: The finding that plasma semicarbazide-sensitive amine oxidase is an independent prognostic marker for mortality in chronic heart failure supports the concept that an elevated plasma semicarbazide-sensitive amine oxidase level has deleterious effects, possibly due to vascular endothelial damage.

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 13 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:643258 CAPLUS
DOCUMENT NUMBER: 134:1918
TITLE: Determination of human serum semicarbazide-sensitive amine oxidase activity: a possible clinical marker of atherosclerosis
AUTHOR(S): Meszaros, Z.; Karadi, I.; Csanyi, A.; Szombathy, T.; Romics, L.; Magyar, K.
CORPORATE SOURCE: Department of Pharmacodynamics, Semmelweis University, Budapest, Hung.
SOURCE: European Journal of Drug Metabolism and Pharmacokinetics (1999), 24(4), 299-302
CODEN: EJDPD2; ISSN: 0378-7966
PUBLISHER: Medecine et Hygiene
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Semicarbazide-sensitive amine oxidase (SSAO) is present in the plasma membrane of several human tissues, e.g. vascular smooth muscle cell adipocytes, and is also found in human serum. Some previous studies on cultured endothelial cells indicate that cytotoxic metabolites (e.g. hydrogen peroxide, formaldehyde, acrolein) formed by serum SSAO may cause endothelial injury and subsequently induce atherosclerosis. To investigate the role of this enzyme in the pathogenesis of macrovascular complications in diabetes, a simple and sensitive radiometric procedure was adapted for human serum measurements. Serum SSAO activity of 35 patients with non-insulin dependent diabetes mellitus (NIDDM) and that of 30 controls was determined using [14C]-benzylamine as substrate. The severity of atherosclerosis was assessed by carotid sonog. Diabetic patients with atherosclerosis exhibited a higher SSAO activity compared to diabetic patients without complications

(212.91±90.54 pmol/mg protein/h vs. 133.17±65.40 pmol/mg protein/h, P <0.04). In diabetic patients without complications, serum SSAO activity was elevated compared to control subjects (133.17 ± 65.40 pmol/mg protein/h vs. 91.79±31.70 pmol/mg protein/h, P<0.01). These results suggest that determination of human serum SSAO activity might be a useful marker in the prognostic evaluation of diabetic angiopathy and atherosclerosis.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 14 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:70880 CAPLUS
DOCUMENT NUMBER: 132:247815
TITLE: Presence of SSAO in human and bovine meninges and microvessels
AUTHOR(S): Castillo, V.; Lizcano, J. M.; Unzeta, M.
CORPORATE SOURCE: Department de Bioquimica i Biologia Molecular, Facultat de Medicina, Universitat Autonoma de Barcelona, Bellaterra, Spain
SOURCE: Neurobiology (Budapest) (1999), 7(3), 263-272
CODEN: NROBEZ; ISSN: 1216-8068
PUBLISHER: Akademiai Kiado
DOCUMENT TYPE: Journal
LANGUAGE: English

100-46-9
74-89-5

AB In spite of the fact that semicarbazide-sensitive amine oxidase (SSAO, EC 1.4.3.6) is widely distributed in almost all tissues, specially in vascularized ones, its presence in brain microvessels is still controversy. Our results resolve this question showing that both human and bovine cerebrovascular tissues do contain the SSAO enzyme. This was achieved biochem., using benzylamine and methylamine as substrates, and by immunoblot anal., using polyclonal antibodies anti-SSAO that recognized a 100 kDa single band in tissue homogenates.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 15 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:182214 CAPLUS
DOCUMENT NUMBER: 131:17308
TITLE: Developmental Vasculotoxicity Associated with Inhibition of Semicarbazide-Sensitive Amine Oxidase
AUTHOR(S): Langford, S. D.; Trent, M. B.; Balakumaran, A.; Boor, P. J.
CORPORATE SOURCE: Department of Pathology, University of Texas Medical Branch, Galveston, TX, 77555-0609, USA
SOURCE: Toxicology and Applied Pharmacology (1999), 155(3), 237-244
CODEN: TXAPA9; ISSN: 0041-008X
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The endogenous substrate(s) and physiol. function(s) of semicarbazide-sensitive amine oxidase (SSAO), a group of enzymes exhibiting highest activity in vascular smooth muscle cells of the mammalian aortic wall, remain undetd. This study examines the pathophysiol. effects in the thoracic aortic wall resulting from specific in vivo SSAO inhibition. Weanling Sprague-Dawley rats were treated acutely or chronically with either semicarbazide hydrochloride or the allylamine derivs. MDL-72274 or MDL-72145 (Marion Merrell Dow Research Institute, Cincinnati, OH). Treatment with these compds. produced acute (6 and 24 h) and chronic (21

day) lowering of SSAO activity in aorta and lung with little effect on the activity of the vital matrix-forming enzyme, lysyl oxidase, in aortas of chronically treated animals. Chronic SSAO inhibition produced lesions consisting of striking disorganization of elastin architecture within the aortic media accompanied by degenerative medial changes and metaplastic changes in vascular smooth muscle cells. No significant difference in the total weight of dry, lipid-extracted aortic elastin and collagen components were observed between chronically SSAO inhibited and control animals. However, the amount of mature elastin was lowered and mature collagen was raised in the aortas of animals treated chronically with semicarbazide. Descending thoracic aortic rings isolated from chronically SSAO-inhibited animals had larger cross-sectional diams. (i.e., exhibited dilation) when compared to corresponding rings from control animals. This study demonstrates that developmental toxicity, characterized by striking vascular lesions and dilated thoracic aortas, can result from specific in vivo SSAO inhibition, suggesting a role for SSAO in connective tissue matrix development and maintenance, and specifically in the development of normal elastin. (c) 1999 Academic Press.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 16 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:36683 CAPLUS

DOCUMENT NUMBER: 130:221497

TITLE: Elevated serum semicarbazide-sensitive amine oxidase activity in non-insulin-dependent diabetes mellitus: correlation with body mass index and serum triglyceride

AUTHOR(S): Meszaros, Zsuzsa; Szombathy, Tamas; Raimondi, Laura; Karadi, Istvan; Romics, Laszlo; Magyar, Kalman

CORPORATE SOURCE: Department of Pharmacodynamics and Third Department of Medicine, Semmelweis University of Medicine, Budapest, Hung.

SOURCE: Metabolism, Clinical and Experimental (1999), 48(1), 113-117
CODEN: METAAJ; ISSN: 0026-0495

PUBLISHER: W. B. Saunders Co.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Previous clin. studies reported elevated semicarbazide-sensitive amine oxidase (SSAO) activity in insulin-dependent diabetes mellitus (IDDM), but there are not sufficient data about SSAO in non-insulin-dependent diabetes mellitus (NIDDM). The present study was conducted to investigate serum SSAO activity in NIDDM patients compared with nondiabetic and IDDM patients. Serum SSAO activity in 61 patients with diabetes (n = 34 NIDDM and n = 27 IDDM) and 36 controls was determined using 14C-benzylamine as a substrate. NIDDM and IDDM patients exhibited higher SSAO activity compared with controls ([mean ± SD] NIDDM, 164.60 ± 69.43 pmol/mg protein/h, P < .0001; IDDM, 143.91 ± 72.45 pmol/mg protein/h, P < .002; control, 91.46 ± 28.11 pmol/mg protein/h). There was a significant pos. correlation between serum SSAO activity and the body mass index (BMI), body weight, HbA1c, fasting plasma glucose, and triglycerides. Within the control group, SSAO correlated with total cholesterol levels. The progression and severity of diabetic complications such as angiopathy may be exacerbated by cytotoxic metabolites (eg, formaldehyde and hydrogen peroxide) formed by SSAO. These results reveal the possibility that elevated serum SSAO activity in association with obesity and hyperlipidemia may be a cardiovascular risk factor in diabetes mellitus.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 17 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:330056 CAPLUS
DOCUMENT NUMBER: 129:120408
TITLE: Properties and functions of tissue-bound semicarbazide-sensitive amine oxidases in isolated cell preparations and cell cultures
AUTHOR(S): Lyles, G. A.; Pino, R.
CORPORATE SOURCE: Department of Pharmacology and Clinical Pharmacology, Ninewells Hospital and Medical School, University of Dundee, Dundee, UK
SOURCE: Journal of Neural Transmission, Supplement (1998), 52(MAO - The Mother of all Amine Oxidases), 239-250
CODEN: JNTSD4; ISSN: 0303-6995
PUBLISHER: Springer-Verlag Wien
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 36 refs. The demonstration of semicarbazide-sensitive amine oxidase (SSAO) activity in some freshly-dispersed cell prepns. and in particular types of cells grown in culture provides increasing opportunities for investigating the importance of SSAO in various aspects of cellular function. Assays of benzylamine and methylamine metabolism in homogenates of cultured cells have established clearly that SSAO is expressed in rat and pig vascular (aortic) smooth muscle cells, as well as in rat non-vascular (anococcygeus, trachea) smooth muscle, brown and white adipocytes. However, to date little or no SSAO activity has been detected in cultures of human vascular smooth muscle cells grown from blood vessels (e.g. umbilical artery) known to contain the enzyme, and the reason for this is not yet apparent. However, those cell cultures expressing SSAO are offering useful exptl. models for studying biochem. and toxicol. consequences upon cellular function which may result from the metabolism of various aromatic and aliphatic amines suggested to be possible physiol. and xenobiotic substrates of the enzyme.
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 18 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:330052 CAPLUS
DOCUMENT NUMBER: 129:107258
TITLE: Deamination of methylamine and angiopathy; toxicity of formaldehyde, oxidative stress and relevance to protein glycoxidation in diabetes
AUTHOR(S): Yu, P. H.
CORPORATE SOURCE: Neuropsychiatry Research Unit, College of Medicine, University of Saskatchewan, Saskatoon, SK, Can.
SOURCE: Journal of Neural Transmission, Supplement (1998), 52(MAO - The Mother of all Amine Oxidases), 201-216
CODEN: JNTSD4; ISSN: 0303-6995
PUBLISHER: Springer-Verlag Wien
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 107 refs. Semicarbazide-sensitive amine oxidase (SSAO) is located in the vascular smooth muscles, retina, kidney and the cartilage tissues, and it circulates in the blood. The enzyme activity has been significantly increased in blood and tissues in diabetic patients and animals. Methylamine and aminoacetone are endogenous substrates for SSAO. The deaminated products are formaldehyde and methylglyoxal resp., as well as H2O2 and ammonia, which are all

potentially cytotoxic. Formaldehyde and methylglyoxal are cytotoxic towards endothelial cells. Excessive SSAO-mediated deamination may directly initiate endothelial injury and plaque formation, increase oxidative stress, which can potentiate oxidative glycation, and/or LDL oxidation and damage vascular systems. Formaldehyde is also capable of exacerbating advanced glycation, and thus increase the complexity of protein crosslinking. Uncontrolled SSAO-mediated deamination may be involved in the acceleration of the clin. complications in diabetes.

REFERENCE COUNT: 107 THERE ARE 107 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 19 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:241373 CAPLUS
DOCUMENT NUMBER: 129:49004
TITLE: Potential therapeutic value of drugs inhibiting semicarbazide-sensitive amine oxidase: vascular cytoprotection in diabetes mellitus
AUTHOR(S): Ekblom, Jonas
CORPORATE SOURCE: Department of Medical Pharmacology, Uppsala University, Uppsala, S-751 24, Swed.
SOURCE: Pharmacological Research (1998), 37(2), 87-92
CODEN: PHMREP; ISSN: 1043-6618
PUBLISHER: Academic Press Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 68 refs. Semicarbazide-sensitive amine oxidase (SSAO) is a copper-containing enzyme found in large amts. in blood plasma and in vascular smooth muscle. The catalytic activity of this enzyme is elevated in diabetes mellitus and some substrates, such as aminoacetone and methylamine also occur in increased amts. in this disease. After deamination by SSAO highly angiotoxic products are formed, methylglyoxal and formaldehyde, resp. Moreover, hydrogen peroxide is also formed as a side-product. These products arising from SSAO-catalyzed reactions may partially explain late-diabetic damages in the kidneys, eyes and peripheral nerves, as well as other cardiovascular disorders. It is therefore proposed that inhibition of SSAO may decrease the formation of these cytotoxic products and therefore prevent or slow the development of late-diabetic complications.
REFERENCE COUNT: 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 20 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:213800 CAPLUS
DOCUMENT NUMBER: 124:253988
TITLE: Mammalian plasma and tissue-bound semicarbazide-sensitive amine oxidases: biochemical, pharmacological and toxicological aspects
AUTHOR(S): Lyles, G. A.
CORPORATE SOURCE: Dep. Pharmacol. Clinical Pharmacol., Univ. Dundee, Dundee, DD1 9SY, UK
SOURCE: International Journal of Biochemistry & Cell Biology (1996), 28(3), 259-74
CODEN: IJBBFU; ISSN: 1357-2725
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with .apprx.140 refs. Mammalian plasma and tissues contain various soluble and membrane-bound enzymes which metabolize the synthetic

amine benzylamine particularly well. The sensitivity of these enzymes to inhibition by semicarbazide and related compds. suggests that they contain a cofactor with a reactive carbonyl group, which has been proposed to be either pyridoxal phosphate, pyrroloquinoline quinone or (more recently) 6-hydroxydopa. It is not yet clear if all of these semicarbazide-sensitive amine oxidases (SSAOs) are copper-dependent enzymes. A variety of compds. have now been identified as relatively selective inhibitors to distinguish the SSAOs from other amine oxidases, to investigate the properties of SSAOs and their potential role in biogenic and xenobiotic amine metabolism in vivo. While plasma SSAO is soluble, most tissue SSAOs appear to be membrane-bound, probable plasmalemmal enzymes, which may be capable of metabolizing extracellular amines. Vascular (and non-vascular) smooth muscle cells have particularly high SSAO activity, although recently the enzyme has been found in other cell types (e.g. adipocytes, chondrocytes, odontoblasts) implying a functional importance not restricted solely to smooth muscle. The substrate specificity of plasma and tissue SSAOs shows considerable species-related variations. For example, while some endogenously-occurring aromatic amines such as tyramine and tryptamine are metabolized well by SSAO in homogenates of rat blood vessels, and also in vitro inhibition of SSAO can potentiate vasoconstrictor actions of these amines in rat vascular prepns., these amines are poor substrates for human SSAO, thus complicating attempts to generalize possible physiol. roles for these enzymes. Vascular SSAO can metabolize the xenobiotic amine, allylamine administration to produce cardiovascular lesions in exptl. animals, sometimes mimicking features of atherosclerotic disease. Recent studies showing that the endogenously-occurring aliphatic amines methylamine and aminoacetone are metabolized in vitro to formaldehyde and methylglyoxal, resp., by SSAO in some animal (including human) tissues, suggest the possibility that toxicol. consequences upon cellular function could result if such conversions occur in vivo.

L34 ANSWER 21 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:95966 CAPLUS
DOCUMENT NUMBER: 124:139297
TITLE: Semicarbazide-sensitive amine oxidases: some biochemical properties and general considerations
AUTHOR(S): Buffoni, F.
CORPORATE SOURCE: Dep. of Preclinical and Clinical Pharmacology, Univ. of Florence, Italy
SOURCE: Progress in Brain Research (1995), 106(Current Neurochemical and Pharmacological Aspects of Biogenic Amines), 323-31
CODEN: PBRRA4; ISSN: 0079-6123
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review, with 74 refs. Semicarbazide-sensitive amine oxidases with a high affinity from benzylamine (Bz.SSAO) (E.E.1.4.3.6) have been biochem. described in many mammalian tissues (adipose tissue, lung, heart, blood vessels). The enzymic activity appears to be expressed by mesenchymal cells (fibroblasts, adipocytes, smooth muscles). Although the physiol. role of this enzymic activity is still unclear, some possible physiol. substrates such as histamine are discussed. Some enzymes of this class (SSAO) have been purified. They share many similarities, among which are that they contain copper and a carbonyl active site. The nature of the organic cofactor of these enzymes is discussed and data are presented which have identified pyridoxal in pig kidney diamine oxidase and in pig plasma

benzylamine oxidase by gas chromatog.-mass spectrometry.

L34 ANSWER 22 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:95964 CAPLUS
DOCUMENT NUMBER: 124:139296
TITLE: Substrate-specificity of mammalian tissue-bound semicarbazide-sensitive amine oxidase
AUTHOR(S): Lyles, G. A.
CORPORATE SOURCE: Dep. of Pharmacology and Clinical Pharmacology, Univ. of Dundee, Dundee, DD1 9SY, UK
SOURCE: Progress in Brain Research (1995), 106(Current Neurochemical and Pharmacological Aspects of Biogenic Amines), 293-303
CODEN: PBRRA4; ISSN: 0079-6123
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review, with 94 refs. Although the existence of a membrane-bound (probably plasmalemmal) semicarbazide-sensitive amide oxidase (SSAO) is well established in various mammalian tissues, and especially within vascular smooth muscle, its importance and the possible consequences of its metabolism of certain physiol. and xenobiotic amines in vivo are under continuing investigation. In this respect, there are major species-related differences in substrate specificity determined in vitro, not only towards the synthetic amine benzylamine , but also towards some other aromatic amines (e.g. tyramine, tryptamine, 2-phenylethylamine, dopamine, histamine) which are possible endogenous substrates. Inhibition of SSAO can potentiate the pharmacol. activity of some amines in isolated tissue (e.g. blood vessel) prepns. from some species. Recent evidence has accumulated that SSAO may also be involved in metabolizing endogenous aliphatic amines such as methylamine and aminoacetone, focusing attention on the fact that the aldehyde products (formaldehyde and methylglyoxal, resp.) are potentially cytotoxic agents. Indeed, SSAO has been implicated in exptl. models of cardiovascular toxicity involving conversion of the industrial aliphatic amines allylamine to acrolein. In summary, metabolism by SSAO may reduce the physiol./pharmacol. effects of some amines, but the resulting metabolites (aldehydes, H2O2) may also have important actions.

L34 ANSWER 23 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:991359 CAPLUS
DOCUMENT NUMBER: 124:75802
TITLE: Further studies on the ex vivo effects of procarbazine and monomethylhydrazine on rat semicarbazide -sensitive amine oxidase and monoamine oxidase activities.
AUTHOR(S): Holt, Andrew; Callingham, Brian A.
CORPORATE SOURCE: Dep. Pharmacol., Univ. Cambridge, Cambridge, CB2 1QJ, UK
SOURCE: Journal of Pharmacy and Pharmacology (1995), 47(10), 837-45
CODEN: JPPMAB; ISSN: 0022-3573
PUBLISHER: Royal Pharmaceutical Society of Great Britain
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Following administration of procarbazine, or one of its metabolites, monomethylhydrazine, to rats, activities of monoamine oxidases A and B (MAO A and MAO B) and of semicarbazide-sensitive amine oxidase (SSAO) were measured ex-vivo. Both compds. were potent inhibitors of SSAO in tissue homogenates, exhibiting ID50 values in most tissues of approx. 8 mg kg-1

(procarbazine) and 0·08 mg kg-1 (monomethylhydrazine). Concurrent dose-dependent inhibition of MAO activities did not occur. In the liver, potentiation of MAO B activity, to 140% of that in controls, was apparent following monomethylhydrazine, and this effect was independent of the drug dose. Both compds. produced a dose-dependent potentiation of MAO A in brown adipose tissue, the elevation being more pronounced following monomethylhydrazine, with activity rising to 350% of that in control homogenates. In a parallel in vitro study, monomethylhydrazine was without effect on MAO A in brown adipose tissue homogenates. By perfusing the SSAO substrate, benzylamine, through the isolated mesenteric arterial bed of the rat, it was found that pretreatment of animals with procarbazine or monomethylhydrazine reduced metabolism of this amine by a similar degree as had been determined ex-vivo in blood vessel homogenates. Thus, these compds. would be suitable for use as selective inhibitors in pharmacol. examns. of SSAO function in isolated tissues and organs.

L34 ANSWER 24 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:373361 CAPLUS
DOCUMENT NUMBER: 122:122481
TITLE: Aminoacetone metabolism by semicarbazide-sensitive amine oxidase in rat aorta
AUTHOR(S): Lyles, Geoffrey A.; Chalmers, Janette
CORPORATE SOURCE: Dep. Pharm. Clin. Pharm., Univ. Dundee, Dundee, DD1 9SY, UK
SOURCE: Biochemical Pharmacology (1995), 49(3), 416-19
CODEN: BCPCA6; ISSN: 0006-2952
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB High speed (105,000 g/60 min) membrane fractions from rat aorta homogenates metabolized the aliphatic amine aminoacetone (AA) to methylglyoxal (MG) with a Km of 19 ± 3 μM, and Vmax of 510 ± 169 nmol MG/h/mg protein. This deaminating activity appears to be due to a semicarbazide-sensitive amine oxidase (SSAO), which is associated with smooth muscle cells in blood vessels of the rat and other species. AA was a competitive inhibitor (Ki of 28 ± 6 μM) of the metabolism of benzylamine, a synthetic amine often used as an assay substrate for SSAO. AA is produced endogenously from mitochondrial metabolism of threonine and glycine, and thus could be a physiol. substrate for SSAO, whereas the production of MG by SSAO could have cytotoxic implications for cellular function.

L34 ANSWER 25 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:213325 CAPLUS
DOCUMENT NUMBER: 120:213325
TITLE: Semicarbazide-sensitive amine oxidase and monoamine oxidase in rat brain microvessels, meninges, retina and eye sclera
AUTHOR(S): Zuo, Dong Mei; Yu, Peter H.
CORPORATE SOURCE: Dep. Psychiatry, Univ. Saskatchewan, Saskatoon, SK, S7N 0W0, Can.
SOURCE: Brain Research Bulletin (1994), 33(3), 307-11
CODEN: BRBUDU; ISSN: 0361-9230
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Monoamine oxidase-A and -B (MAO-A and MAO-B) and semicarbazide-sensitive amine oxidase (SSAO) activities were assessed in several rat micro-vascular

tissues and eyes using selective substrates and inhibitors. In rat brain microvessels both MAO-A and MAO-B activities are relatively high and the levels of the two types of MAO's are comparable. Retina possesses a similar ratio of MAO-A and B but the activities are much lower. Eye sclera and meninges exhibit mainly MAO-A and MAO-B, resp. Aorta is the only tissue where SSAO is the predominant amine oxidase. Relatively low, but significant amts. of SSAO were also detected in brain microvessels, meninges, retina and eye sclera. Methylamine was observed to be deaminated by SSAO from different tissues. The physiol. and toxicol. implications of amine oxidases in these tissues are discussed.

L34 ANSWER 26 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1992:211661 CAPLUS
DOCUMENT NUMBER: 116:211661
TITLE: The metabolism of aminoacetone to methylglyoxal by semicarbazide-sensitive amine oxidase in human umbilical artery
AUTHOR(S): Lyles, Geoffrey A.; Chalmers, Janette
CORPORATE SOURCE: Dep. Pharmacol., Ninewells Hosp., Dundee, DD1 9SY, UK
SOURCE: Biochemical Pharmacology (1992), 43(7), 1409-14
CODEN: BCPCA6; ISSN: 0006-2952
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The aliphatic amine aminoacetone has been described previously as a product of mitochondrial metabolism of threonine and glycine. Here, aminoacetone is shown to be deaminated to methylglyoxal by supernatants obtained by low speed centrifugation (600 g/10 min) of human umbilical artery homogenates, and also by membrane fractions isolated by high speed centrifugation (105,000 g/60 min) of these supernatants. Metabolism of 100 μM aminoacetone was completely inhibited by 1 mM propargylamine and MDL 72145, drugs which are capable of inhibiting the membrane-bound semicarbazide-sensitive amine oxidase (SSAO) activity found in vascular smooth muscle cells, whereas 1 mM pargyline and deprenyl which are inhibitors of monoamine oxidase, were without inhibitory effect. Estimated kinetic consts. (at pH 7.8) for aminoacetone metabolism were Km = 92 μM; Vmax = 270 nmol/h/mg protein. In addition, aminoacetone was a competitive inhibitor (Ki = 83 μM and 128 μM in low speed supernatants and high speed membrane fractions, resp.) of [14C]benzylamine metabolism by SSAO in this tissue. Aminoacetone would appear to be an endogenously occurring amine with a Km for metabolism by SSAO far lower than other aliphatic and aromatic biogenic amines examined previously as potential physiol. substrates for the human vascular enzyme and possible implications of this are discussed.

L34 ANSWER 27 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1989:624777 CAPLUS
DOCUMENT NUMBER: 111:224777
TITLE: The influence of amine-metabolizing enzymes on the pharmacology of tyramine in the isolated perfused mesenteric arterial bed of the rat
AUTHOR(S): Elliott, Jonathan; Callingham, Brian A.; Sharman, Dennis F.
CORPORATE SOURCE: Dep. Pharmacol., Univ. Cambridge, Cambridge, CB2 1QJ, UK
SOURCE: British Journal of Pharmacology (1989), 98(2), 515-22
CODEN: BJPCBM; ISSN: 0007-1188
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The pressor response to the infusion of tyramine (Tyr) into the isolated perfused mesenteric arterial bed of the rat was studied at both a low and a high dose (0.2 and 2.0 μmol) and the effect of monoamine oxidase-A (MAO-A) and semicarbazide-sensitive amine oxidase (SSAO) inhibition was examined Very little MAO-B activity is found in homogenates of this tissue when Tyr is used as substrate. Inhibition of SSAO by treating rats with MDL 72145 1 h before dissection had no effect on the maximum pressure attained or the area under the curve (AUC) of the response to both low and high doses of Tyr. Inhibition of MAO-A, by inclusion of 10 μM clorgyline in the perfusing fluid, resulted in no potentiation at both low or high doses of Tyr. The inhibition of both these enzymes together substantially increased the AUC of the pressor response. Cocaine (3 μM) potentiated the responses to adrenaline (Ad). At this dose, cocaine reduced the peak height and the AUC of the responses to both doses of Tyr. Inhibition of extraneuronal uptake mechanisms with corticosterone (29 μM) did not potentiate the response to Ad and did not alter the response to Tyr (low dose). The effects of MDL 72145 and clorgyline on the directly acting amine Ad were studied. MDL 72145 caused a small increase in the EC50 and in the maximum response to Ad, while clorgyline (10 μM) increased the EC50 value slightly and decreased the maximum response. When the 2 inhibitors were used in combination, a significant increase in the maximum response (but no change in the EC50) was seen. These data indicate that the action of Tyr in this vascular bed is, at least partly, indirect. Inactivation of Tyr is affected by both MAO-A and SSAO in the blood vessel wall. Inhibition of both enzymes seems to be necessary to achieve potentiation of the pressor response. The effects of these enzyme inhibitors on directly acting amines may mask any potentiation of the response when MAO-A or SSAO alone is inhibited.

L34 ANSWER 28 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:625485 CAPLUS
DOCUMENT NUMBER: 109:225485
TITLE: Properties of a semicarbazide-sensitive amine oxidase in human umbilical artery
AUTHOR(S): Precious, Elaine; Lyles, Geoffrey A.
CORPORATE SOURCE: Dep. Pharmacol. Clin. Pharmacol., Univ. Dundee, Dundee, DD1 9SY, UK
SOURCE: Journal of Pharmacy and Pharmacology (1988), 40(9), 627-33
CODEN: JPPMAB; ISSN: 0022-3573
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The metabolism of some aromatic amines by amine oxidase activities in human umbilical artery homogenates was studied. The inhibitory effects of clorgyline showed that 5-hydroxytryptamine (5-HT) and tryptamine, 1 mM, were predominantly substrates for monoamine oxidase (MAO) type A, whereas MAO-A and B were both involved in the metabolism of β- phenylethylamine (PEA), 100 μM, and tyramine, 1 mM. About 20-30% of tyramine and PEA metabolism was resistant to 1 mM clorgyline, but sensitive to inhibition by semicarbazide, 1 mM, indicating the presence of a semicarbazide-sensitive amine oxidase (SSAO). Benzylamine, 1 mM, appeared to be metabolized exclusively by SSAO with a Km (161 μM) at pH 7.8 similar to that found for SSAO in other human tissues. Tyramine and PEA were relatively poor substrates for SSAO, with very high apparent Km values of 17.6 and 13.3 mM, resp., when determined in the presence of clorgyline, 10-3M, added to inhibit any metabolism of those amines by MAO activities. However, kinetic studies with benzylamine indicated that clorgyline, 10-3M, also appears to inhibit SSAO competitively such that the true Km values for tyramine and PEA

may be .apprx.60% of those apparent values given above. No evidence for the metabolism of 5-HT or tryptamine by SSAO was obtained. The aliphatic amine methylamine was recently shown to be a specific substrate for SSAO in umbilical artery homogenates. Benzylamine and methylamine were used as SSAO substrates in histochem. studies to localize SSAO in tissue sections. Both amines promoted tissue staining which occurred predominantly over the medial layers of the vessel wall, and this staining was prevented by the presence of semicarbazide, 1 mM, but not by pargyline, 1 mM, in the reaction medium. The results support the notion that smooth muscle cells are an important site of SSAO activity in human blood vessels and reinforce the possibility that methylamine, an endogenously occurring amine, may be a better candidate as a physiol. substrate for SSAO in man than several aromatic biogenic amines so far examined

L34 ANSWER 29 OF 29 USPATFULL on STN

ACCESSION NUMBER:	2001:136427 USPATFULL			
TITLE:	Synthetic polynucleotides			
INVENTOR(S):	Weiss, Anthony Steven, Sydney, Australia			
PATENT ASSIGNEE(S):	The University of Sydney, Sydney, Australia (non-U.S. corporation)			
	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6277622	B1	20010821	<--
	WO 9806830		19980219	<--
APPLICATION INFO.:	US 1999-242095		19990208	(9)
	WO 1997-AU505		19970811	
			19990208	PCT 371 date
			19990208	PCT 102(e) date
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	GRANTED			
PRIMARY EXAMINER:	Prouty, Rebecca E.			
ASSISTANT EXAMINER:	Hutson, Richard			
LEGAL REPRESENTATIVE:	Howson and Howson			
NUMBER OF CLAIMS:	7			
EXEMPLARY CLAIM:	1			
NUMBER OF DRAWINGS:	12 Drawing Figure(s); 12 Drawing Page(s)			
LINE COUNT:	1967			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to synthetic polynucleotides which encode lysyl oxidase, lysyl oxidase like molecules or variants of these species. The synthetic polynucleotides of the invention permit the expression of functional lysyl oxidase, lysyl oxidase like molecules or variants of these species, typically in good yield. The invention also relates to recombinant DNA molecules containing these, synthetic polynucleotides, to cells containing them and to uses of the expression products.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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